

**ecology and environment, inc.**

Global Environmental Specialists

720 Third Avenue, Suite 1700, Seattle, WA 98104

Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 8, 2012

TO: Jeff Fetters, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington. SUBJ: **Organic Data Quality Assurance Review,
Fourth Avenue and Gamble Parking Lot Site, Anchorage, Alaska**

REF: TDD: 12-01-0004

PAN: 002233.0757.01SI

The data quality assurance review of two water samples collected from the Fourth Avenue and Gamble Parking Lot site located in Anchorage, Alaska, has been completed. Analysis for Gasoline Range Organics (GRO) (ADEC Method AK-101) was performed by Test America, Inc., Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and/or 4 Data Validation Electronic/Manual Process (S2VEM and/or S4VEM).

The samples were numbered: JRZ87 JRZ99

Data Qualifications:**1. Sample Holding Times: Satisfactory.**

The samples were maintained and received within the QC limits of $< 4^{\circ}\text{C}$. The samples were collected on July 17, 2012, and were analyzed on July 27 and August 6, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for preserved water samples except for sample JRZ87 which was analyzed after holding time limits due to blank contamination; the associated positive sample result in sample JRZ87 was qualified as an estimated quantity with a low bias (JL).

2. Initial Calibration: Acceptable.

Calculations were verified as correct. The correlation coefficient was within QC limits.

3. Continuing Calibration: Acceptable.

Calculations were verified as correct. All percent differences were less than or equal to the laboratory control limits of 25%.

USEPA SF**1409866**

4. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Satisfactory.

A method blank was analyzed at the required frequency of every 12 hours for each matrix, preparation technique, and analysis system. GROs were not detected in any blank except the continuing calibration blank on July 27, 2012. Samples with positive results associated with this blank were reanalyzed; therefore, no qualifiers were applied based on blank contamination.

6. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

7. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

8. Blank Spikes: Acceptable.

Blank spike results were within laboratory QC limits.

9. Duplicates: Acceptable.

Laboratory spike duplicate results were within laboratory QC limits.

10. Quantitation and Quantitation Limits: Acceptable.

Sample quantitation and sample quantitation limits were correctly calculated.

11. Laboratory Contact: Not Required.

No laboratory contact was required.

12. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the site-specific sampling plan Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical method. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.
- JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.
- JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.
- JQ - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).
- N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-34058-1

Client Sample ID: JRZ87

Lab Sample ID: 580-34058-1

Date Sampled: 07/17/2012 0903

Client Matrix: Water

Date Received: 07/19/2012 0940

AK101 Alaska - Gasoline Range Organics (GC)

| | | | | | |
|------------------|-----------------|-----------------|------------|------------------------|-----------|
| Analysis Method: | AK101 | Analysis Batch: | 580-117028 | Instrument ID: | TAC041 |
| Prep Method: | 5030B | | N/A | Initial Weight/Volume: | 5 mL |
| Dilution: | 1.0 | | | Final Weight/Volume: | 5 mL |
| Analysis Date: | 08/06/2012 2117 | Run Type: | RA | Injection Volume: | |
| Prep Date: | 08/06/2012 2117 | | | Result Type: | SECONDARY |

| Analyte | Result (mg/L) | Qualifier | MDL | RL |
|--------------------------------------|---------------|-----------|-------|-------|
| Gasoline Range Organics (GRO)-C6-C10 | 0.20 | JL | 0.015 | 0.050 |

| Surrogate | %Rec | Qualifier | Acceptance Limits |
|-----------------------------|------|-----------|-------------------|
| Trifluorotoluene (Surr) | 93 | | 50 - 150 |
| 4-Bromofluorobenzene (Surr) | 111 | | 50 - 150 |

MW 8812

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-34058-1

Client Sample ID: JRZ99

Lab Sample ID: 580-34058-2

Date Sampled: 07/17/2012 1000

Client Matrix: Water

Date Received: 07/19/2012 0940

AK101 Alaska - Gasoline Range Organics (GC)

| | | | | | |
|------------------|-----------------|-----------------|------------|------------------------|---------|
| Analysis Method: | AK101 | Analysis Batch: | 580-116206 | Instrument ID: | TAC003 |
| Prep Method: | 5030B | | N/A | Initial Weight/Volume: | 5 mL |
| Dilution: | 1.0 | | | Final Weight/Volume: | 5 mL |
| Analysis Date: | 07/27/2012 0805 | | | Injection Volume: | |
| Prep Date: | 07/27/2012 0805 | | | Result Type: | PRIMARY |

| Analyte | Result (mg/L) | Qualifier | MDL | RL |
|--------------------------------------|---------------|-----------|-------|----------------|
| Gasoline Range Organics (GRO)-C6-C10 | ND <i>mu</i> | | 0.015 | 0.050 <i>U</i> |

| Surrogate | %Rec | Qualifier | Acceptance Limits |
|-----------------------------|------|-----------|-------------------|
| Trifluorotoluene (Surr) | 101 | | 50 - 150 |
| 4-Bromofluorobenzene (Surr) | 103 | | 50 - 150 |

MW8812